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THE WISCONSIN ARCHEOLOGIST

PAPERS READ
AT THE
JOINT MEETING
OF
WISCONSIN SCIENTIFIC SOCIETIES

PUBLISHED BY THE
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MILWAUKEE

Wisconsin Archeological Society

MILWAUKEE. WIS.

Incorporated March 23, 1903, for the purpose of advancing the study and preservation of Wisconsin antiquities.

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These are held in the Lecture Room in the Library-Museum Building, in Milwaukee, on the third Monday of each month, at 8 P. M.

During the months of July to October no meetings will be held.

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Life Members, $25.00. Sustaining Members, $5.00

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All communications in regard to the Wisconsin Archeological Society or to the "Wisconsin Archeologist" should be addressed to C. E. Brown, Secretary and Curator, State Historical Library, Madison, Wis.

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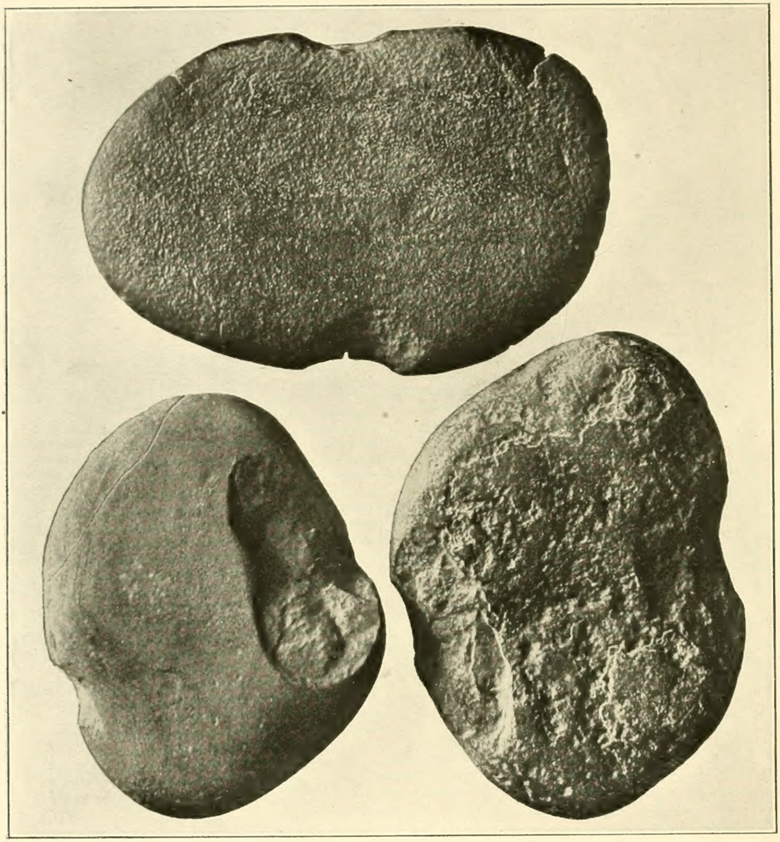

PEBBLE NET-WEIGHTS
Kenosha, Kenosha County, Wisconsin.
Milwaukee Public Museum.

THE WISCONSIN ARCHEOLOGIST

A Quarterly Bulletin Published by the Wisconsin Archeological Society.

Vol. 7. MILWAUKEE, WIS., JUNE TO SEPTEMBER, 1908. No. 3.

THE JOINT MEETING OF WISCONSIN SCIENTIFIC SOCIETIES.

CHAS. E. BROWN,
Secretary, Wisconsin Archeological Society.

On February 13 and 14, 1908, a joint meeting of Wisconsin scientific societies was held in the lecture room in the Public Museum, in Milwaukee. The several societies uniting in this meeting were the Wisconsin Academy of Sciences, Arts and Letters, the Wisconsin Archeological Society, the Wisconsin Natural History Society, the Wisconsin Mycological Society, and the Wisconsin Section of the American Chemical Society. Joint sessions were held separately with the Academy, at different times during the two days and a union meeting of all of the participating organizations on Thursday evening, February 13. At the latter meeting Mr. A. B. Stout, representing the Wisconsin Archeological Society, delivered a lecture illustrated with stereopticon slides, on "The Archeological Wealth of Wisconsin," which was greatly appreciated by the many persons in attendance.

The joint meeting of the Wisconsin Archeological Society with the Academy was held on the afternoon of Friday, February 14. It was conducted by President W. H. Ellsworth and was very well attended, several members traveling considerable distances to be present. The following papers were presented:

"Local historical and archeological museums." *Reuben G. Thwaites.*
"The Calumet." *George A. West.*
"Rude stone implements from the Congo Free State." *Frederick Starr.*

"Judgment used by the aborigines in selecting materials for their utensils and weapons." *George L. Collie.*

"The progress of archaeological science in Wisconsin." *Warren K. Moorehead.*

"Archeological work in Wyoming." *Harlan I. Smith.*

"The trade beads of Wisconsin." *Publius V. Lawson.*

"The tabular mounds of Wisconsin, their purpose and authorship." *George H. Squier.*

"Mounds in the vicinity of McFarland, Dane County." *W. G. McLachlan.*

"A Mandan village site." *Herbert C. Fish.*

"Banner, or ceremonial stones." *C. H. Robinson.*

"Pebble net-weights." *George A. West.*

"The occurrence of perforated pottery disks in Wisconsin." *Charles E. Brown.*

Several of these papers are printed in this bulletin. Two papers listed on the program by Rev. Stephen D. Peet and by E. K. J. H. Voss, respectively, were read by title. The contribution of Dr. Reuben G. Thwaites has since appeared in print as Bulletin of Information, No. 34, of the publications of the State Historical Society of Wisconsin. At the close of the session, interesting exhibits of archeological specimens were made by the Messrs. P. O. Griste of East Troy, and John Cappon, Jr., of Milwaukee. On the evening of this last day of the meeting members of the several societies and their ladies attended a dinner given in the Colonial room, in the Plankinton House, at which Dr. Geo. W. Peckham presided. To Secretary C. E. Allen of the Wisconsin Academy, who carried out the plans for the joint meeting of Wisconsin societies, great credit is due for its success.

THE PROGRESS OF ARCHAEOLOGICAL SCIENCE IN WISCONSIN.

Warren K. Moorehead,
Curator, Department of Anthropology, Phillips Academy, Andover, Mass.

It is no exaggeration to say that the scientific societies of Wisconsin have done more to further the preservation of prehistoric remains of all kinds, in the past few years, than similar organizations in any single state. There are older archaeological societies, but there are none so active as the Wisconsin Archeological Society. It is particularly encouraging, and speaks well for the future, that such a number of individuals—rather than a few experts—are engaged in collecting and studying human artifacts of the past. And this activity extends throughout the entire St. Lawrence Basin, although Wisconsin stands first. There is to the north, the museum made progressive by our competent friend Prof. David Boyle. To the east in the Iroquouis country is Rev. Wm. Beauchamp; and his studies are now preserved in eight or ten pamphlets. True, Dr. Beauchamp is in northern New York, but he confines himself to the Iroquois and kindred tribes and that must needs embrace the culture of much of the St. Lawrence Basin. Michigan and Minnesota are also doing their part.

A study of the collections at Milwaukee, Madison, Beloit and a dozen other cities, teaches the archaeologist that the culture of the St. Lawrence is to be differentiated from that of elsewhere in the United States, and in that culture the use of copper must take first place. Here, indeed, we have an important field and aside from the excellent articles published in the Wisconsin Archeologist and in Mr. Moore's Reports, all of which must not be taken as final, there is room for a great work upon copper and its use in prehistoric times in the United States. Naturally such a work should be written in Wisconsin.

Wisconsin and Michigan present certain peculiar problems to be solved by archaeologists. Nowhere else are the effigy mounds found in such numbers or of such size as in Wisconsin. In art, next to copper, rank the pipes. Now that the preservation of some of the effigies is assured, it is proposed to conduct explorations of the burial and village sites. Such investigation added to the study of types and art forms, will enable future students to solve these difficult problems.

Observers in archaeology view with satisfaction the progress and good work of the several scientific organizations in this region. It is particularly interesting that Wisconsin people should preserve and study their own antiquities rather than permit the representatives of southern and eastern museums to carry them elsewhere. By so doing, Wisconsin sets other states a worthy example. I congratulate the society on its accomplishments and trust that the good work it has begun will be carried to a successful termination.

RUDE STONE IMPLEMENTS FROM THE CONGO FREE STATE.

Frederick Starr,
Professor of Anthropology, University of Chicago.

Stone artifacts from Africa attract more than ordinary attention from the fact that, for a long time, the statement was repeatedly made that there has been no stone age in that continent. The statement can no longer be made, since today stone implements of various types have been reported from South Africa, the Zambesi region, Central Nigeria, Egypt, the Barbary States and other districts. So far as the Congo Free State is concerned, thousands of specimens have already been collected and are to be seen in public museums and in private hands in Belgium and other European countries. A number of papers have been printed regarding them, two being of special importance. Of these, one by Xavier Stainier, *L'Age de la Pierre au Congo*, forms a part of the *Annales* of the Congo Museum; the other, *Etude comparée de l'Age de la Pierre au Congo et dans l'occident de l'Europe,* by Dr. Victor Jacquez was presented at the Congress of Archaeology and History at Dinant in 1903. Stainier's paper is chiefly important for its information regarding localities. Jacques gives the best available information regarding forms and types of the instruments.

Stanier locates twenty-six places upon his map where stone objects have been found. Twenty of these are in the Lower Congo, in the District of the Cataracts, the mountainous region between Boma and Leopoldville. There are two reasons why so many of these localities are clustered together within so small an area. First, and undoubtedly the more important, the fact that over a large part of the Congo Free State, no material for such implements is to be found; second, the area in question has been most frequently traversed, most completely occupied by the white man and hence best examined and studied. No doubt as the country becomes more populated new localities will be found in large numbers. But few of them will be within the great area of level country within which the navigable portion of the main Congo and its network of tributaries lie. Where, however, broken country is reached, at the Upper Cataracts of the Congo proper and at the head of navigation of the tributary streams, with natural exposures of suitable rock-materials, we may expect new localities to be found. As a matter of fact, the six localities mapped by Stanier outside the region of the Lower Cataracts are in exactly such positions.

After spending some months in the Middle and Upper Congo regions we made a pedestrian trip in the District of the Cataracts to visit one of these sites. Leaving the railroad at Thysville, we walked some thirty miles across a hill or mountain country to the Baptist Missionary Society's station of Wathen (Ngombe-Lutete). Here we were outfitted and supplied with a little company of six mission boys as carriers and guides. We planned to go to South Manyanga, or as near to it as might be necessary. We took the journey rather easily and at almost five in the afternoon found ourselves at a typical stone-age site, about fourteen miles from our starting point. The spot is situated on the summit of a hill, a long ride, from which we caught a distant view of the Congo River near the native village of Kiakongo. Although we had kept a constant lookout for relics, we had found but a single one on the slope of another ridge about half an hour before. This was a rude scraper of a sort of greenish chert. Upon the ridge which we had now reached, there were several open spaces of considerable size, bare of vegetation and thickly sprinkled over with splintered stones most of which were brownish quartzyte. The material varied in color toward purple, and in texture toward a cindery-chert. Some pieces of chert also were red, grey, or greenish in color and there were a few fragments of a grayish limestone. The site was plainly a work-shop, but presented some peculiar features. We found no good examples of hammerstones—in fact few if any pebbles that presented any evidence whatever of use as pounders. There were no small chips and flakes and few pieces that even remotely suggested typical nuclei. There

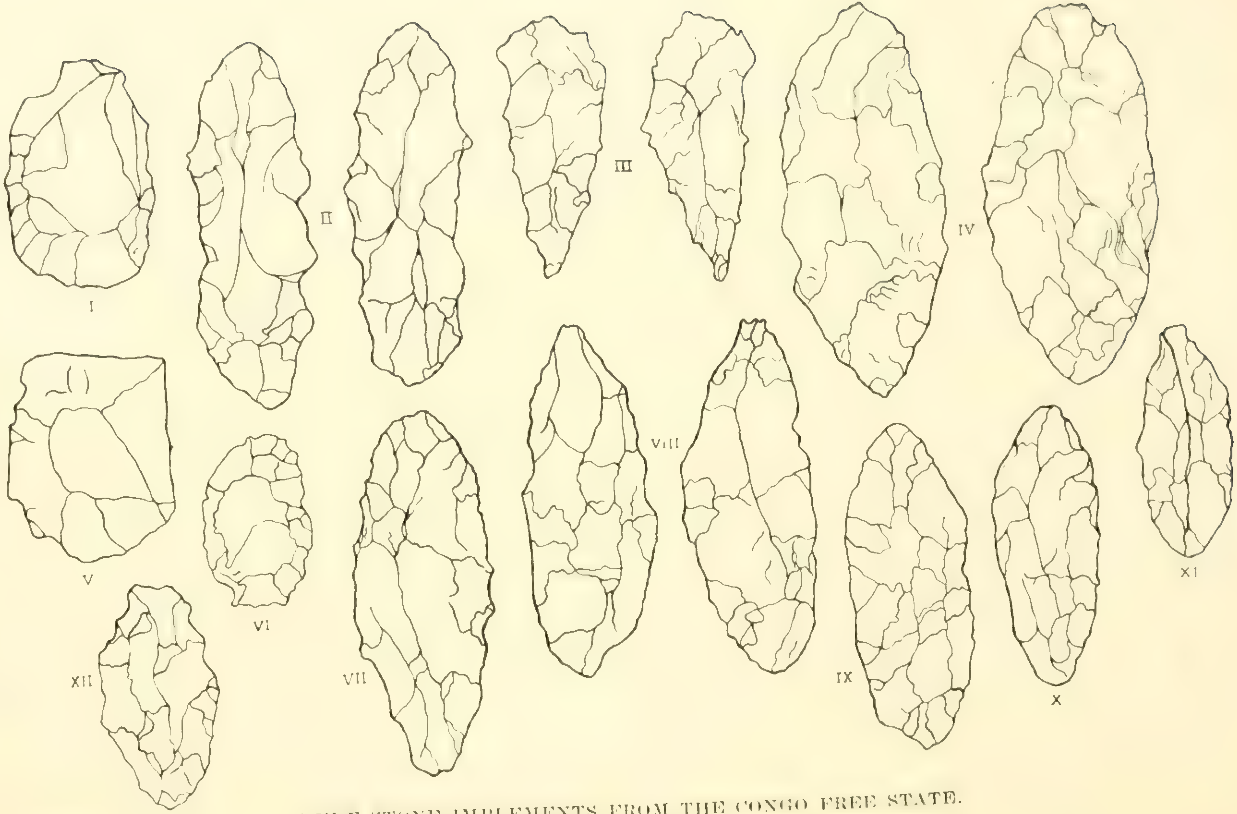

Plate 2.

RUDE STONE IMPLEMENTS FROM THE CONGO FREE STATE.

were plenty of masses that had been clearly shattered or splintered by natural causes. The number of pieces that might be considered turtle-backs, haches, blanks or scrapers, was altogether out of proportion to the masses of unworked or unchipped stones. The source of the material was by no means evident. The bodyrock does not seem to contain any considerable quantity of nodules or streaks of cherty or quartzose material. Nor did we see strata or heavy masses of quartzyte in our whole journey. Our opportunity for seriously investigating these geological points was however scant. Night was coming on and we still had more than an hour's walk before to Kiakongo, our sleeping-place; our main interest too was archeological. We decided that the material scattered so abundantly over the surface was the heavier and less destructible residual matter, left by the erosion and destruction of the original softer country rock which had contained it. There was however little evidence that the masses were nodules and they showed little weathering. Our party of eight persons gathered thirty-five or forty good specimens in less than ten minutes. To save carriage, we hid them in a clump of grass and walked on to Kiakongo. Having found so good a site, we decided not to press on to South Manyanga. Returning to our ridge we spent the larger part of the morning there. At Kiakongo, we had tried to hire another boy to carry our collections, but in vain. Hence, we had to reduce our series to what could fairly be distributed among our already fairly-loaded little carriers. We brought about a hundred specimens and might have brought ten times that number. We photographed a small area,—as small as could be made to fill the field of our camera, and within it were seven good turtle-backs or haches. We had planned to collect everything from a given measured area, but were really able to bring only selected pieces showing a fair range of forms. A few of these are here for your inspection. (See Plate 2.)

Extremely common are turtle-backs—long, rather narrow, ovoid, flat, or almost upon one surface, which I will call the lower. This lower face is often a single fracture face; it is an original surface of the rock-mass from which the piece was derived: it is sometimes chipped around the margin. The upper surface presents a sharp medial ridge, from which coarse flakings extend down and outward to the edges. A cross section is almost triangular. From such turtle-backs the forms pass gradually into types very like the palaeolithic hache, where the ovoidal, or sometimes almond-shaped blade is almost equally worked upon both the upper and lower surfaces, the whole piece becoming neater and more artistic. These are like Holmes's "blanks." In a smaller number of cases the chipping has been continued until fairly delicate spear-point or knife-blade forms result. There are also scrapers.

While it is easy to fit these facts to the idea that this site was a workshop, where raw material was worked up into ‘‘blanks,’’ and to see in these specimens rejects, lost blanks, unfinished pieces, etc.,—a curious fact is that they fail to find in the surrounding country the scattered and lost "finished specimens," which the enormous number of pieces here occurring warrants us in expecting. As a matter of fact few or no delicately made arrowpoints, spearheads, and knives are so found.

Had we gone on to South Manyanga, we should have found precisely similar conditions to those we studied. Dupont saw six ridge-top work-shop sites in its immediate vicinity. M. Cabra, a special commissioner of the King, whom I met with in my journey down the Congo, has visited one of these South Manyanga sites. He described it to me and said that one might load a ship with specimens from that single place. He believes the objects are products of natural causes, resulting from day-time heat and night-time chilling. He asserts that he found one specimen, lying unremoved, in the rock-mass from which these natural causes had fissured it. This gentleman's earnestness in his contention led us to look carefully, but in vain, for similar occurrences. Some of the long turtle-backs, showing on the flat face, an original rock-mass surface might readily raise such doubts as M. Cabra uttered. One here shown might be a good test-specimen for such an argument. The enormous number of specimens is certainly staggering. Remember that there are perhaps scores of ridge-tops in the District of the Cataracts, that repeat the phenomena of these two sites.

In closing I shall mention two other points of archeological interest. You all know the ‘‘nutstones’’ of Ohio and Kentucky. All along our eighteen mile walk from Wathen (Ngombe-Lutete) to Kiakongo, we came now and then upon heaps of crushed palm nuts. With them were beautiful examples of hammerstones and "nutstones" of a coarsely-granular purplish rock. The hammerstones were rounded pebbles, which plainly show the characteristic marks of use. The stones upon which the nuts had been crushed showed the typical pitting of our American specimens. Though the material was fairly hard, in many cases, no doubt the entire wear was produced by the work of a single afternoon. Stones were picked up when needed and abandoned after one using. We often saw such hammerstones and "nutstones" in native villages but never finer examples than those we saw upon this tramp. We intended to keep some good ones but the desire to spare our carriers led us to postpone gathering them until we were near our journey's end—as usual postponement was fatal.

In the Upper Kasai region, Mr. S. P. Verner showed us a chert or quartzose flake that seems to have been employed as a scraper. It came from Bena Luidi, where the Lulua River enters the the Kasai. Mr. Verner said that specimens were not uncommon, but high-water prevented our visiting the locality, which I believe had not been reported heretofore. It lies near the end of navigation of the Kasai River in the region where the country becomes broken and mountainous and rapids begin. It illustrates the suggestion already made. We must expect the list of localities for such objects to be greatly extended. We should not be surprised at the discovery of stone-age sites upon all important tributaries of the Congo at the points where rapids begin.

THE TRADE BEADS OF WISCONSIN.

Publius V. Lawson, LL. B.

When Perrot went among the Mascoutin near Princeton on the upper Fox River, about 1665, he threw *rassade*, to the women saying, "these will better adorn your children and girls, than do their usual ornaments." This was a French term for porcelain round glass beads, white or colored. The long tubular beads being called *canons*. The leggings worn by the Indian and hunter in winter as early as 1686 were ornamented with bead designs. The Intendant Begon entered as an item of expense in the wars with the Fox tribe during the years 1715 to 1717, "22.545 porcelain beads at 10 livre the 1,000 beads," equal to the value of $45.00, present currency; "2 livres of Rassade at 4 livres," equal to $1.00; "6,466 porcelain beads at 30 livres for 1,000 beads." Louvigny in the same wars, "for buying provisions and for making presents to the savages," had "3,970 porcelain at 30 livres a thousand," equal to $24.00 current money, or about 30 cents the thousand.

The English "belt," corresponding to the French "collar of porcelain," was made by the Indians of native wampum, fabricated from sea or fresh water shells, bones, copper or stone, or of the glass or porcelain beads of white contact; and by the whites of their trade glass or porcelain beads. These belts were the tribal archives and necessary as the deeds of treaty on every occasion of council either among the aborigines, or between them and the whites. They were given for murder, for wives for territory, or peace. The gravest and most solemn affairs were satisfied by transfer of the eternal wampum belt. When de Langlade was sent by Sinclair to command the tribes in the burning of St. Louis, he carried a number of belts from Sinclair to the plains savages, made with a figure of two men grasping hands. Poor Gorrell left at the mossgrown picket fort of La Baye, out on the farthest frontier, in the Fox River valley, was greatly embarrassed for lack of beads for belts to give in his councils with the tribes who came to him from many miles about. After buying all the traders possessed and borrowing all he could from the squaws, he caused to be made over, ''belts received from the different nations, as pledges of their fidelity,'' containing 21,800 wampum." These, made into belts, were again given out to the visiting savages with a speech like this: "By these belts, I wipe away all the blood that was spilt and bury all your brothers bones that remain unburied on the face of the earth, that they may grieve you no more, and to open a passage to your hearts, and light a fire of friendship and concord. I also clear a great road from the rising to the setting sun, that all nations may travel freely and safely.'' When Pemoussa, the great Fox chief, plead for the lives of the women and children at Detroit, he laid down a wampum belt with the remark, "This belt is to pray you to recollect that you are our kindred.'' The Potawatomi women ''put on all the porcelain beads they possess, so that after their fashion they look very well dressed.''

A belt of wampum was given to cover the life of a victim of savage murder. Beads, vermillion, feathers and red cloth were the chief articles of savage decoration of both sexes and so continue down to this day. A shock of color would ever attract the aboriginal attention and a handful of beads was worth more than a handful of powder or corn to their improvident senses. The beads of the white man were equal in savage imagination to their firearms and equally cherished as their chief gain by white contact. A trader could purchase the rich furs of the continent with a bag of beads. The wampum belt was the most solemn token at the feast, making for war, and making for peace, remaining the cherished relic of all tribes.

All the literature of the missionary, the voyageur, the coureurs de bois, and the discoverer down from those far off romantic days, come to us laden with the merits of a belt of wampum and a string of beads. The conquest of the continent was made with the bloodless arms of a string of beads. Every canoe in every fleet was laden with its bags of beads, as necessary to the success of the voyage of the missionary, trader or discoverer as his salt pork and dry corn. When Ainsee was sent along the Fox River to renew the English friendship after the war of the Revolution, he had with him the sesame to savage hearts, the belt of wampum for every tribe.

The archeologists searching now among the refuse on the ancient site of trader huts or Indian towns find among the debris the stray lost beads in larger or smaller quantity. On the Doty Island shore of the Fox River just above the loggery of Governor Doty, in Neenah, down from the old Winnebago village site, in Nicolet cove, there is a bank of lake shore sand and gravel, mixed with shell, where the school boy year after years has picked up quantities of trade beads and named it the "Bead Beach." For many years the boys have dug into this sand with their hands and with much patience picked out the stray beads. In this manner there have been gathered a number of quarts. Others have indulged in the same fascinating pastime. The author has a string of these beads four feet long recovered one by one from these sands.

ARCHEOLOGICAL WORK IN WYOMING.

HARLAN I. SMITH,
Department of Prehistoric Anthropology, American Museum of Natural History.

I recently returned from a superficial archeological reconnaissance of the southern half of the State of Wyoming. This region is near the center of a vast neglected field for archeological research to which I called attention in my contribution to the Boas Anniversary Volume of 1907.

The neglected area extends from the arctic region on the North to the Mandan remains of Dakota and the well known archeological remains of the Mississippi Valley on the east; to the Cliff Dwellings on the south and the rich archeological finds of the Santa Catalina Islands, the Sacramento Valley of California and the plateau culture of Washington, and British Columbia on the west.

The region is so vast and the problems are so numerous, that no one institution, much less any individual, might hope to more than begin the work. The Museum has done this through my preliminary trip. I endeavored to interest not only the local educational institutions, but all the great museums in the Country to cooperate in the work.

Among the problems to be solved, the following may be mentioned. When did man first appear in the region? Judging from the results of exploration in other places it may take many years of the combined efforts of all who are interested before extensive evidence on this point is discovered. What was the culture of these first inhabitants? Was there more than one culture in the area, either at various places or during different periods? How was the culture affected by the introduction of the horse? No doubt the coming of the horse to a people whose only beast of burden was the dog, caused a great advance in their culture, as it would enable them to travel further in search of food, to possess and transport more property and to become somewhat more independent of the scanty water supply.

The larger part of the area was inhabited by tribes of Indians belonging to the Athabascan, Algonkin, Siouan and Shoshonean groups. An examination of the archeological remains will throw light upon the early history of these people and their migrations.

The central portion of the area was the home of the American bison, upon which the Indians, when first met by the whites, depended not only for their food, but for the material for their clothing, moccasins, covers for their tipis and ferry boats or rafts, backgrounds, upon which to paint their calendars, and other things of like character. The horns and bones furnished them with material for various articles and implements, among which may be mentioned spoons, bowls, skin scrapers, etc.

After all the vaunted superiority of the white race, our people today are holding the cattle much as the Indian held the buffalo. For instance, the Indians held the herds at the North Platte River in order that the tribes living north of the river might be able to get the buffalo all through the year, for if left to themselves, the herds would have traveled further to the south in winter. Our round-up and general treatment of the cattle of the plains, resembles today and always has in wildness and cruelty the buffalo hunt of the Red Men.

In the eastern part of Wyoming, some extensive quarries, where the prehistoric people found quarzite and jasper, out of which to make chipped implements, have been known for some years. I visited these, securing specimens and photographs, and, also discovered other extensive quarries, some of them covering acres in the same general region. Beside these, notes were taken of still other quarries known to the local ranchers. Nearly everywhere in Wyoming, but more in the eastern part, circles of stones marking the sites of ancient tipis were found. They may be counted by the hundred in the southern part of Converse County. These stones were no doubt used to hold down the skin covering of the tipi. Stones are still employed for this purpose by the Blackfoot Indians in Montana, only a short distance to the north.

Pictographs painted in red and black, and petroglyphs cut or pecked on the cliffs were noticed, especially in the vicinity of the Wind River Mountains. A number of these were photographed, some of them represent horses, proving them to have been made since the white man brought the horse to America, others represented the buffalo.

Steatite pots in the form of an egg, with the tip of the largest end cut off, and apparently of a type unknown in other parts of America, were noticed, especially in western Wyoming. True pottery was rare. Less than a dozen sites where it occurred, have been located and these were all well towards the southern part of the State. They probably mark the northern limits of pottery in this portion of the area.

In the vicinity of Hammond in the Algonkin area, caves into which the wolves had dragged bones of cattle, sheep and other animals, and in front of which is much village debris, and a large number of tipi circles, as well as some petroglyphs, probably contain many remains, and this vicinity as well as the eastern slope of the Wind River Mountains, would probably repay detailed exploration. Several months' work in the latter region would be sure to enable the explorer to secure a collection of photographs, illustrating the art of the vicinity, as executed in the form of petroglyphs.

It would seem to be the duty of the students of the Cliff Dwelling and Pueblo region to explore northward into this vast neglected area, in an attempt at finding the northern limit of that culture. The students of the archeology of the Mississippi Valley, have a similar duty to perform in determining the western limits of the agricultural culture of that Valley. While the students of California owe it to the world to investigate the eastern portion of California and Nevada. The eastern limits of the plateau culture of southern British Columbia, and Washington, should also be defined.

A MANDAN VILLAGE SITE.

H. C. Fish,
Curator, State Historical Society of North Dakota.

We can not say that the Mandans are a Wisconsin Indian altho it has been stated that these Indians journeyed from their ancient homes in Ohio and stopped for a time in the southern part of the State. And there has been reported the existence of ancient circular earth lodges in southern Wisconsin. Whether we can substantiate these reports is another question. Catlin seems to have seen these circular earth remains all the way up the Missouri from St. Louis and it may be true that the Mandan went down the Ohio and up the Missouri instead of coming overland or by the great lakes. Our earliest authentic records place the Mandan in established villages located along the Missouri and its tributaries from Bismarck to a place one hundred miles up the river.

These villages are made famous in history by the visits of Lewis and Clark, Catlin, Maximilian, Bradbury, Brackenridge, and by many other minor lights.

Out over the broad rolling hills three miles northwest of Bismarck, on the east bank of the Missouri, is the site of an ancient village possessing natural defences of a high order. For scenic beauty this site can not be surpassed. One is pleased at the broadness and the grandeur of the outlook; the long stretches of river, the rolling tumbling hills all about, the vacant spot of Custer's fort across in the old Sioux territory, and Little Heart Butte 15 miles to the south. Viewing what nature has done to protect the citadel it appeals to us at once as an ideal place for an Indian village.

The trails leading into the village are still discernable and approach the site along two beaten paths entering the village by the way of two once fortified gates. The village site covers about

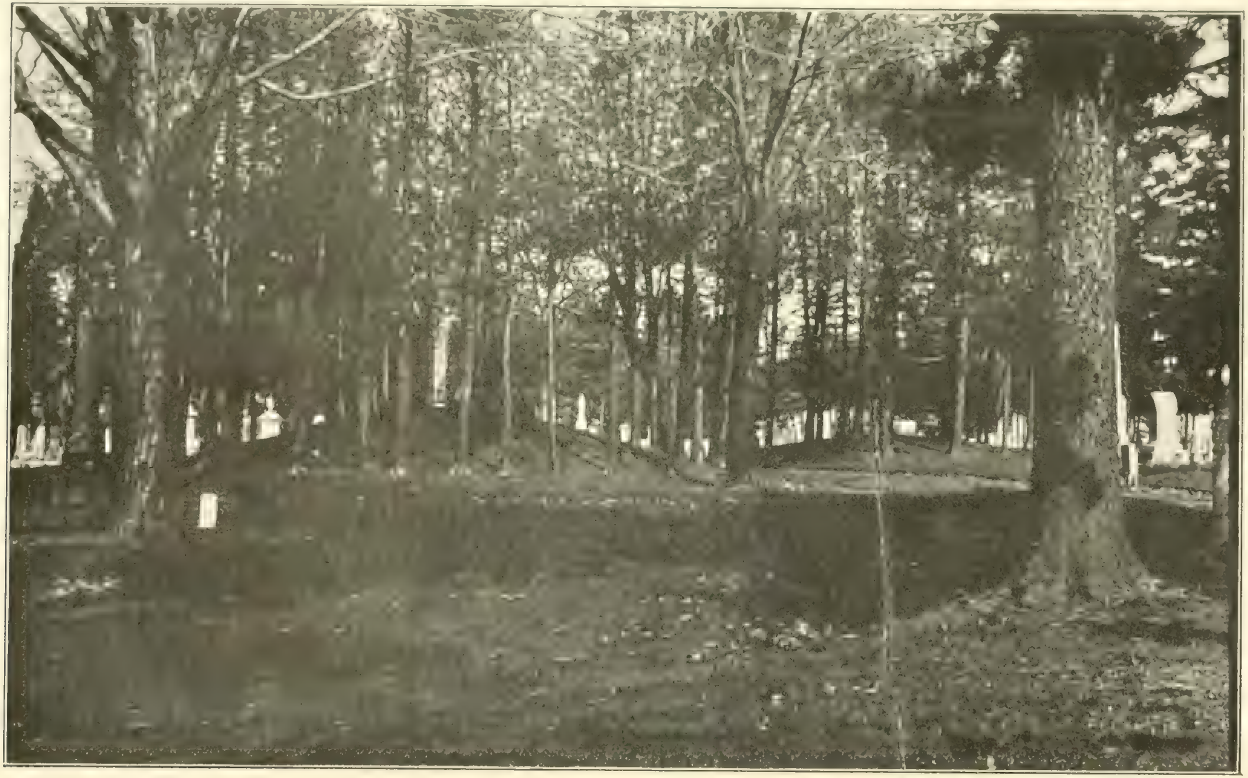

Plate 3. Courtesy of Mrs. Katherine M. Pierce.

MOUNDS PRESERVED IN MOUND CEMETERY, RACINE, WISCONSIN.

three and a half acres and lies on a level summit in the form of a circle. On the west the ground slopes nearly perpendicularly down a hundred feet to what was at that time the river bank. The north, northwest and south are less precipitous and are protected by a sort of a platform along the hill-side which is some ten feet below the crest of the hill. Here was probably a ditch or a wall so placed that it would be a protection against an attack from those sides. The ravines on the north and the south gradually approach the east side until we have an unprotected neck of land 250 feet wide. This is the place where they must repel the old Sioux invader. Stretching out on this side is a level open space which extends east unbroken for a thousand feet and farther on is a higher plat of ground, and all a gradual slope towards the village. At this narrow unprotected neck of land are a series of fortifications. This place was protected by a ditch and a wall. The wall shows plainly a breastwork in the form of two ox-bow protuberances which reach out toward the plain for twenty feet and which are equal distances from the sides of the narrow neck of land. These are the remains of a well flanked gate.

Entering the village proper our attention is at once attracted by the large number of rings with a slight depression in the center. There are eighteen of these house sites around the edge of the village. Some of the depressions mark the location of old caches which are sometimes in front of the door and often in the house. In less ancient Mandan villages we would find the walls of the houses standing some two feet above the village and showing the openings of the doors, but this site is too old to show such walls. These houses were from thirty to sixty feet in diameter and made of earth over rafters of willow with a smooth coating of pounded clay on top of the house. A number of families lived in them. In the center of the village is a clear place where in all probability once stood the sacred house of the Mandan.

On the northeast side of the hill, some twenty-five feet from the village proper is a large granite boulder 7x12 feet in dimensions. On the lower part of this boulder is a smooth depression about as large as a dinner plate. Here many a Mandan woman has ground the corn for the family, and here many a village happening has probably been discussed by the crowd of waiting squaws. Near the upper part of the boulder is another small depression about as large as a small round butter plate. This was used to split cherries and grind berries of various kinds. This boulder, of all the ancient surroundings of the village, brings us to a realization of the years that have passed by the prairies since the Mandan dwelt here.

The Mandan were a clean, careful people and so their village was swept of all debris. This was thrown over the steep banks, and today broken relics of pottery, bones, implements and beads are found on the steep sides of the village. There is a ravine on the northwest side showing a well defined trail down toward the river. Their dead were buried on scaffolds to the east on the rise of ground just beyond the level space in front of the fortified gates.

Down across a deep ravine to the north of the village is a fertile hillside which was very likely used for garden purposes. When this village was peopled, when the ravages of Sioux and smallpox tore the life from this citadel is unknown, but it was probably from one hundred to one hundred and twenty-five years ago. Few Mandan are left in the Missouri Valley, the language has changed, the culture has changed, and as a nation the Mandans are extinct, leaving us many interesting remains to ponder over and discuss.

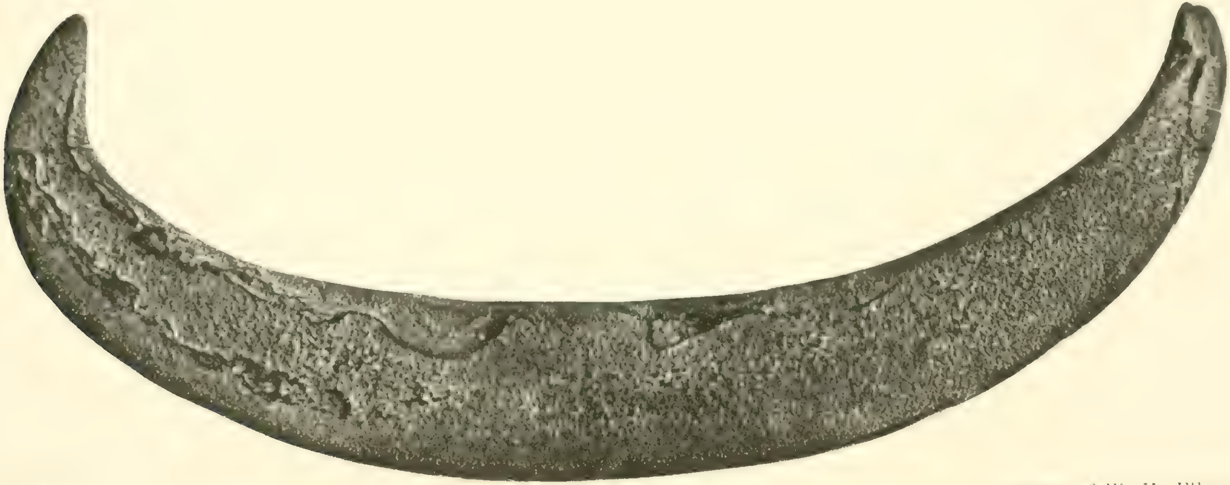

Plate 4.

Courtesy of W. H. Elkey.

COPPER CRESCENT.

Chilton, Calumet County, Wisconsin. Logan Museum, Beloit College.

ABORIGINAL DISCRIMINATION IN THE SELECTION OF MATERIALS FOR TOOLS.

Geo. L. Collie.
Curator, Logan Museum.

Under this head it is my desire to discuss some evidences that the American aborigine exercised deliberate choice when he picked out materials for the manufacture of artifacts.

Stone had to be shaped by some one or more of five processes as is well known. These manual arts, as stated by Holmes, are as follows: 1. Fracturing by splitting, breaking, flaking. 2. Bruising by battering, pecking, bushing. 3. Abrading by grinding, rubbing, polishing. 4. Incising by cutting, piercing, drilling. 5. Modeling by stamping or hammering. These shaping arts called for different types of material in several instances and this necessitated choice on the worker's part at the outset. He not only needed to know what kind of an artifact he was to make, but which of the several processes he was to employ before he finally settled upon the material he would use. Man learned by slow degrees and by experience the nature of rock properties. He learned to distinguish between different types of rocks much as a modern geologist does in the field by taking account of two features, namely: 1. The mineralogical composition. 2. The texture of the rock. I do not mean to infer that early man was absolutely guided by the quality of the rock, other factors entered into the choice, but rock character was always a prominent factor.

All artifacts are the resultant of an interaction between several factors,—character of the rock, need of the worker, form of the blank selected, skill of the worker. If the tool maker was in a hurry for a utensil he would be likely to choose material easier to work than ordinarily would be the case,—material that he could shape hurriedly. If he were not skilful he would spend time to look for a blank that was a close approximation to the desired tool, that he might be spared the necessity of shaping it with his unskilled fingers. This would often mean the selection of poorer material than might have been the case under different circumstances. Primitive man, as a recent writer has pointed out, had to exercise more real mental acumen and sagacity, had to be more agile and alert and bring into action more varied qualities of mind and body in order to live than the great mass of our present population. He used his mind and his judgment in the selection of materials, he weighed all of the pros and cons in the choice of materials for artifacts just as he did in all the concerns of life. A prevailing notion that he picked up any old stray piece of rock that came conveniently to his hand is a mistake; his choices were results of purpose and intellectual effort. To illustrate my position, allow me to select one type of tool, the grooved axe, and discuss the choice of materials for that particular utensil. It must be borne in mind that early man in Wisconsin rarely used quarried material for axes, he sought rather for water worn or ice worn cobbles, and made the axe from these partially shaped and polished forms. It must also be remembered that there are three general classee of rocks, viz: The igneous, clastic and the metamorphic. The igneous rocks are of two general types, the coarser grained intrusives such as the granites and the finer textured extrusives like basalts and their close relatives the diabases, though the latter is often quite coarsely crystalline.

In selecting material for axes the aborigine employed both types of igneous rocks.

Clastic rocks are of two general types, those deposited in solution from water and those deposited from mechanical suspension. Flint, chert, etc., are examples of the former: sandstone, limestone, etc., are instances of the latter. The aborigine rarely used this type of rock for axes. The metamorphic rocks are made from the two preceding types by heat and pressure. They have certain structural features, as a rule, such as cleavage and fissility. There is a banded arrangement of the material not due to deposition but to dynamic action, hence arises the familiar banded structure of such metamorphic rocks as gneiss and schist. This type of rock was used by early man for axes to some extent. Nine-tenths of the axes in a given collection are made of igneous rocks, and the great bulk of the igneous rocks used are the fine textured rocks, especially basalt and diabase. No rock is better suited for pecking and polishing than the finer grained igneous rocks, nor on the whole are any more resistant to fracture, none are tougher. These are qualities of prime importance in axes. The very fact that so large a percentage of axes are made of the best obtainable material is significant of the fact that early man deliberately sought for certain qualities and looked until he found them.

It shows how truly he was a judge of rock composition and texture, of the suitableness of any given rock for a given purpose. Let us consider in more detail some of the features which he sought, or those which he rejected. In selecting a rock for axe purposes, other things being equal, he would take first of all a quartzless type. If it were a question between granite, which contains quartz, and syenite, which has little, he would almost invariably select the latter. You very rarely see an axe made of quartz bearing rock in this region. The axe maker was aware apparently of the hardness of the mineral, of the difficulty with which it was worked, and he naturally avoided rocks that contained it in abundance when seeking axe material. He recognized the mineral, because in rocks which have such similarities as syenite and granite he chose the former, that is, he did not depend upon color or texture alone to guide him, but he must have looked for that glassy mineral that we call quartz.

Though he used quartz abundantly for other purposes we do not find him selecting the massive forms of that mineral for axes except occasionally. Then again the axe maker selects rocks that are relatively free from mica. Rocks rich in that mineral are used for pendants and ceremonials, but not for axes or other tools that have to undergo hard usage. Micaceous rocks flake readily, and they also show a marked tendency to disintegration through hydration. Here again the aborgine recognized a mineral which contributed undesirable qualities to a rock and he rejected it. Again he refrained from using coarse grained types of rocks, as a rule. He chose rather those of fine and even texture. The only common exception in Wisconsin is the employment of feldspar porphry where the porphyritic crystals are sometimes of fair size. The crystals in coarse grained rocks have coarse structural planes. They tend to fracture along such planes readily, and fragments will break out from the parent mass and mar, if not ruin the tool. Experience taught early man the inefficiency of such materials and his judgment, of which we are speaking, kept him from wasting his time in experimenting with them.

Again the aborgine avoided the use of rocks that contain gneissic and schistose structures. Rocks that contain well developed planes of any sort are obviously unfit for axes, as they tend to split along these structural planes and become unfitted for use; hence, metamorphic rocks are not useful for axes and are not commonly employed save the greenstone, a metamorphosed igneous rock which was used quite extensively by axe makers along the shore of Lake Michigan, especially in the neighborhood of Manitowoc and Sheboygan. Greenstone possesses a fine texture. It is hard and tough and forms an ideal material in many respects, but it has this one drawback, it does contain a great many structural planes, and the axe sooner or later comes to grief. How rarely a greenstone axe is well finished, the aborgine knew all too well that in some unexpected hour it would break. If 90 per cent of our Wisconsin axes are made of igneous rocks, about 8 per cent perhaps are made of metamorphic rocks, while the remaining 2 per cent are formed from sedimentary rocks of various types, chiefly sandstone and limestone. The latter were not used if any better material were at hand, and axes made of this material are generally found in the south-west portion of the state in the Driftless region where better material was and is scarce, and where it was often necessary to use the local limestone or sandstone. Clastic rocks lack the cohesion and hardness that is desirable in axes; they break easily, become dull very readily and need constant attention. Aborigines did not restrict themselves to this somewhat limited choice of materials from volition. Wherever opportunity afforded he selected unusual types of rock and thus showed his desire for variety and wide range of materials. This is shown by his employment of jadeite, hematite, actinolite, etc., wherever they were obtainable. It is noticeable that in this country, the axe maker sought a type of material that could be pecked and polished. He did not use flaking material very abundantly, but just the reverse seems to be true in Europe. This may be due partly to the fact that a better grade of flint is found in Europe than here, and it is obtainable much more readily in the soft chalk than in limestone, or it may be due to an entirely different trend in culture. In contrast to the selection of materials for axes we find that the large hammers or bone crushers, etc., were made of a greater diversity of materials in which quartz bearing rocks are not infrequent. The aim seemed to be to select a cobble as near to the desired shape as possible without much reference to material. Comparatively little work needed to be done upon these types beyond pecking a groove. On the other hand, in pestles and mortars, we find that tough, fine grained, quartzless rocks of igneous origin are employed, as a rule, though the use of fine limestones is not unusual. Here again there seems to be an avoidance of quartz bearing rocks, possibly because they disliked the coarse grit which would inevitably arise when such rocks were employed.

What has been said regarding the axe illustrative of aboriginal judgment and knowledge might be repeated for each type of artifact. In each case we should find that the worker had particular reasons why he selected material for a certain artifact, and that these reasons were founded in an understanding of the mineralogical and structural differences in rocks. If we study ornaments and ceremonial stones, we shall see that ordinarily he selected a soft ornamental rock, especially the banded slates, but if he chose to use igneous rocks he rarely employed the types used for axes, but ordinarily the handsome porphyries which made showy and attractive objects. If he wished material for net weights or sinkers for lines or weights for spears, he took the easily worked and abundant sandstones and limestones, which he rejected for other and harder usage.

If we examine that great and important series, the spear heads and arrowheads, we still find a distinct tendency to select materials of a definite kind for these purposes. Silica of some sort is usually taken because of its peculiar conchoidal form of fracture, its hardness and its non-cleavability. It is of distinct importance that a point and edge of enduring character should be obtained with the least expenditure of time effort. This was secured more readily through the flaking and chipping process than by any other means. There is a great variety of material in the silica group, some of it being better fitted for points than others.

The most desirable material is that which has sufficient homogeneity, both in material and structure to be trustworthy. Chalcedony and some of its varieties, flint, chert, jasper are the best fitted on the whole to meet such a test. Chalcedony is not crystalline, nor is it on the whole, amorphous, that is, without some structure. The crystallic forms, such as quartz proper, do not fulfill the conditions because the crystalline structure interferes with conchoidal fracture and the workman cannot be certain that he will come out at the last with the form he set out to make. This is also true of sedimentary types like quartzite; the grain of the rock interferes with the fracture and causes it to break unevenly. In spite of all the argument about the matter, it is correct to say that there is comparatively little true flint in the United States, at least the Indian used little, instead he used its close relative chert of which there is great abundance. And, taking it all in all, this was the best material he had and he knew it and acted accordingly. As a rule, chert, jasper and the like occur in limestones in nodules very often, or in thin irregular layers. Chert and jasper are softer and more brittle than flint because of impurities. It is also less uniform in texture as a whole. The aborigines of this country did not have as good an opportunity for materials as did those who lived in the region of the chalk beds of Europe. We find the Indian using other materials such as obsidian, a very superior type, though more brittle, and on the whole softer than chert. Some of the finer grained lithoidal igneous rocks were also employed though sparingly. They are not very trustworthy for fine work.

I wish to reiterate the statement that if in any given region there is a choice of material for points, we find early man using the best, and in any given nodule either selecting the best or making an attempt to chip it out in the process of finishing the weapon. It is also noticeable in this region that the best and the most perfect artifacts are made from material brought from a distance, while the smaller more common and less valuable articles are made from local material. A master mechanic who was trying to make a choice piece would not try his hand on poor material, he must have the best or he did not work.

I trust that I have succeeded partially, at least, in the attempt to show that the aborigine had some real discernment in the choice of materials, and that this discernment rested upon mental processes, upon comparison; upon inferences drawn from comparison, and that in his ability to select the right material for any given service, he was no whit behind the white man who lives in his place today.

PEBBLE NET-WEIGHTS.

Geo. A. West,
Vice-President, Wisconsin Archeological Society.

That one of the several methods formerly employed by the Wisconsin Indians in securing a supply of fish was by the use of gill-nets is evidenced by the stone net-weights found on their village sites along the west shore of Lake Michigan. These are usually oval in shape, from two to six inches in length, half as wide, less than an inch in thickness and contain an artificial notch on each side.

The ordinary water-worn pebble of convenient form, taken from the beach, was notched by one or two simple blows and utilized as a sinker, the native fishermen thus availing themselves of the material nearest at hand. The softer varieties of stone were most generally selected, yet many were made of granite and other hard rocks.

From the village and camp sites extending along the shores of Lake Michigan, in the vicinity of Kenosha, this state, a large number of these net weights have been secured; Mr. F. H. Lyman of Kenosha having more than 200 of these rude implements in his collection. The Black River village sites along the lake shore some miles directly south of Sheboygan, in this state, have produced large numbers of these net-weights, a fine series of which is in the collection of Mr. Lee R. Whitney of Milwaukee. On the shore of Lake Superior, near Bayfield, Wisconsin, the writer secured a number of examples of the same kind

"This style of net-weights, notched at the sides or at the ends, are frequently met with in the eastern states. An occasional specimen is found containing four notches. Thousands of them have been collected along the Susquehana River, by Mr. T. M M. Gernerd, of Muncey, Pa., which are precisely the same shape as those found in Wisconsin. Some have notches at the ends and others at both sides and ends. (The Now and Then, v. 11, 75.) A series of 76 "notched pebbles" was found by Dr. C. C. Abbott, in 1878, near Bordentown, New Jersey (Abbott: Primitive Industry, 238). Within historic times similar net-weights have been in use by the Chinooks and other tribes of the northwest coast of America, (Rau: Prehistoric Fishing, 157–59).

Perforated stones were used by the southern Indians, attached to grape vines, to drag along the bottom of streams that the fish might be driven into their fish-traps (Jones: Antiq. of the So. Ind., 338). Perforated stone sinkers are not, to the writer's knowledge, met with in Wisconsin. It has been thought that the stone implements known as plummets, occasionally met with in this state, were also employed as net-weights.

The net-weights of Wisconsin occur almost exclusively along the shores of lakes Michigan and Superior, which would seem to indicate that nets were used by the Indians for capturing fish that swim in schools, as do the whitefish and herring of these lakes. From the absence of sinkers in any numbers along the shores of our interior lakes and streams, it is evident that other means, such as the spear, the arrow and fish trap, were employed by them in securing fish from those waters.

As to the style, material and size of the nets used we have no certain information, but, judging from the ingenuity and skill exhibited by the early Indians in the manufacture of pipes, pottery and other artifacts found on the same sites with the net weights, we are led to the belief that their nets were not only ingeniously made, but fully answered all requirements. Although the implements of this class found in Wisconsin are among the rudest of aboriginal artifacts, their frequent occurrence indicates that they played an important purpose in the domestic life of the early Indian, and do no less than the finest wrought implements help to illustrate his mode of life.

Additional Notes and References.—Dr. W. A. Phillips reported the occurrence of notched net-weights on the camp sites located along the Lake Michigan shore-line from Kenosha, Wisconsin, southward into Indiana. (Smithson, Rep. 1897, p. 588.) Dr. A. Gerend mentions a cache of twenty-five as found on the Black River sites, near Sheboygan. (Wis. Archeo., v. 1, no. 3, p. 17, fig. 2.) At the time his contribution was printed (1902), he evidently did not suspect their purpose. Series and single specimens of these net-weights collected by Mr. Chas. E. Brown on both the Black River and Kenosha sites have been placed in the State Historical museum; in the Public museum at Oshkosh; in the museums at St. Francis Seminary, at Beloit, Carroll and Ripon colleges, and at Lawrence University. He reports the finding of several specimens at Montgomery Lake, Kenosha County. H. H. Willard reports the presence of similar implements at Mazomanie. We may therefore expect that their occurrence may yet be noted on other Wisconsin River sites, and possibly from other interior points in Wisconsin.—Editor.

BANNER OR CEREMONIAL STONES.

C. H. Robinson.
Member, Anthropological Society, Washington, D. C.

Every student of American ethnology and every collector of artifacts of the pre-Columbian Indians of that part of the country east of the Rocky Mountains, has observed the artistically formed and beautifully finished objects of stone, which, for want of knowledge of the use to which they were applied, writers on ethnology have generally called "Banner Stones," or "Ceremonial Stones."

These objects are rare as compared with the many thousands of arrowheads, spears, knives, stone axes, celts and even pipes, but they are still occasionally found east of the great plains region, in districts widely separated, and which, at the advent of the whites, were inhabited by tribes of different linguistic families.

If similar objects have been found in the ruins of the cave dwellings or ancient pueblos of the Southwest, the fact has escaped the writer's attention.

These stones are usually of the most artistic form, the two wings being equal, so far as the eye can detect, and much labor and skill have been expended upon them; their form and finish being more elaborate than any other article of primitive Indian manufacture, not excepting pipes.

The most common form is that of the illustration (Plate 5) which is of the full size of one in the writer's collection, found near Colonial Beach, Virginia, about sixty miles below Washington City, on the Potomac River. It is of very black slate, highly polished, and striations made by the flint drill may be seen the entire length of the hole or orifice.

This form, or some slight variation of it, all tending toward an appearance of a bird in flight with outspread wings, is found in all, unless we except a few objects which have more the appearance of small pick-axes; but these, in the writer's opinion, may have been used for a different purpose.

These artifacts could not by any possibility have been intended or used as weapons, utensils, tools or implements, for, as a rule, they are of slate or other equally friable material and would have been shattered by the first blow; so, the name "double-bladed-axes," given them by some writers, may well be discarded. The writer has, however, in his collection a banner stone exactly like the one shown in the plate, which is made of very hard stone; but in this case the hardness of the material doubtless discouraged the artist, for, although the form is complete and it was probably polished, the work was abandoned and the article discarded when the drilling of the hole had progressed about one-fourth of the distance from each end.

So far as has come to the writer's knowledge, no use of such stones on the part of any Indian tribes has been observed since the whites came in contact with them, and no Indian has been able to explain their use or purpose, when questioned in regard to them; and it must be supposed that, whatever may have been the reason for their manufacture, the use had terminated so long before the discovery of the country by the whites that there existed no longer even a tradition in regard to them, and they were as great a mystery to the Indians as they still are to the student of ethnology; but the elaborate form and artistic finish of nearly-all, at once suggest that their use must have been of great importance.

Some writers have advanced the theory that these stones with a staff or long stick inserted in the hole, were used as batons of office or symbols of official authority; while others conclude they may have been carried in religious processions as symbols of a cult or worship.

As against the first hypothesis, is the fact that when the whites first came in contact with the Indians of this region, they found no such governmental or social organization as would require or support the use of such insignia, and had such conditions ever existed, it is scarcely possible that such a backward step in social progress would have been taken as to have occasioned the abandonment of the office and its insignia. Such retrogression has rarely, if ever, occurred in the social progress of a primitive people. The rule has been to elaborate and extend rather than curtail or abandon official ceremonies and insignia.

Against the second theory suggested above, the objection obtains that among the Indian tribes which inhabited the region over which the banner stones are distributed, none, with perhaps the exception of the Nachez, had even traces of such public worship as would have included processions with sacred symbols. On the contrary, among the tribes east of the Rocky Mountains, the worship of the Indians, if such it may be called, was that of "making medicine" by the individual, for the most part in private, the worshipper carefully secluding himself from all observation. To this, however, there may have been the exception of occasional public incantations by medicine-men acting as rain-makers or conducting the ceremonial dances, but even these differed so greatly among the tribes as to make it difficult to believe that in them they could all have used the banner stone, especially as no such symbols have been observed in these same ceremonials when many times witnessed by whites, and it is almost conclusive that if ever so used they would have been retained.

In the absence of reliable information on the subject, the writer ventures to suggest, not as conclusive but as a subject for thought and investigation, the following as a possible solution of the enigma of the banner stone.

Students of American ethnology and Indian folk-lore have observed that among many tribes bird myths are common. That of the Thunder Bird in its various forms is perhaps the most familiar. It is not only found in the folk-lore of many tribes, but is represented upon shell gorgets and other objects taken from mounds of apparently great antiquity.

It is well known that the head of the woodpecker was used in many of the incantations of the medicine men of different tribes and in the "mystery-bag" given to the young warrior when initiated into manhood, some of the tribes still continuing to do so.

The object of this paper is to suggest that the myth of the Thunder Bird may have been of such great antiquity as to have come down through tradition and folk-lore tales from the more

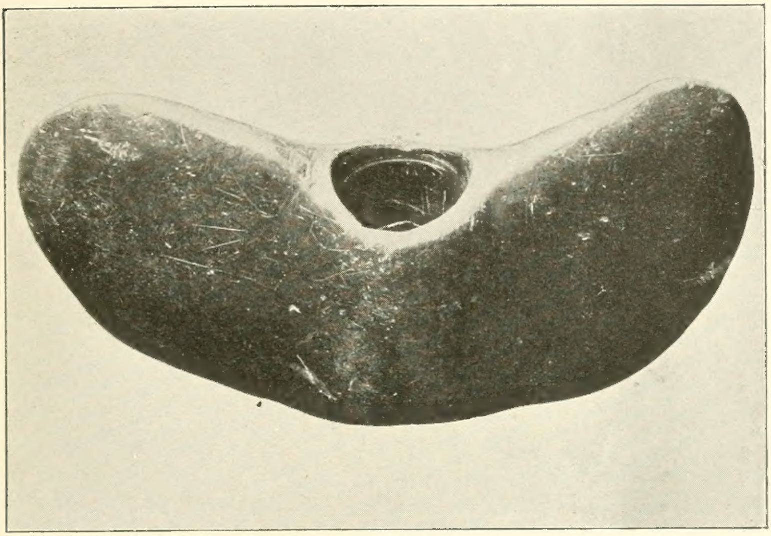

Plate 5.

BANNER STONE.

primitive ages before the separation into linguistic stocks or separate tribes, and that this symbol, in the form of the banner stone, remained with all for many generations and long after the cult or worship of the supernatural being for whom it may have been the symbol, had been superceded by other cults. In such case it is not all unlikely that these symbols, being praccally of indestructible material, were regarded with superstitious reverence long after knowledge of their meaning had been lost to tradition. We have a warrant for this suggestion in the fact that the burning of incense in our present day churches and a number of other ceremonials of Christian worship, are undoubtedly shadows of primitive observances.

After the cult of the Thunder Bird had been swallowed up by other beliefs, the banner stone, if still an object of superstitious reverence, may well have been used by the medicine-men in their incantations or appeals for benefits, or in their treatment of disease, as the symbol of some powerful but unknown spirit.

As tending to support the writer's theory that the Banner Stone was the symbol of a very ancient bird myth, it may be observed, that, while to some extent conventionalized, nearly all have more or less the form of a bird in flight. Now if a stick be thrust through the hole in the stone, the head of a woodpecker or other bird affixed at the end, and, perhaps some tail-feathers below, the resemblance to a bird in flight will be sufficiently striking to convince one that it was intended; and if so, a religious cult or some other powerful motive there must have been to induce the expenditure of skill and labor necessary in the manufacture of these objects; and if in the earliest ages of the Indians these stones were connected with a religious superstition or belief, it is but reasonable that the symbol itself should be regarded with fear or reverence and be retained with the pipes and other paraphernalia of the medicine-men, long after the cult or worship had itself been lost to tradition.